

RESPONSE under 37 C.F.R. § 1.111  
U.S. Appln. No. 10/027,978

### **REMARKS**

By this amendment, Applicant cancels claims 1-13 and 29-33 (non-elected claims withdrawn from consideration) thus claims 14-28 are all the claims pending in the application. Claims 14-28 stand rejected. Reconsideration and allowance of all pending claims are respectfully requested in view of the following remarks.

### **OBJECTIONS.**

#### **SPECIFICATION**

The Office Action objects to Applicant's specification under 37 C.F.R. § 1.71 as failing to provide for a description of preferred embodiments, essentially on the grounds that there is significant use of the terms "may be" or "may." Applicant respectfully submits that the text in the section entitled "Detailed Description" sets forth the preferred embodiments of the present invention. Since the Office Action has failed to provide any evidence that Applicant has not included at least one preferred embodiment, and Applicant is unaware of any requirement that optional or alternative language such as a "may be" or "may" cannot be used in the detailed description, it is believed that this objection is in error. (See also, the discussion below in respect to the best mode rejection under 35 U.S.C. § 1.112 first paragraph.) Accordingly, reconsideration is respectfully requested.

#### **ABSTRACT**

The Office Action objects to the Abstract as not being within the "range of 50 to 150 words." (12/3/04 Office Action pg. 5.) Applicant notes however that no violation of any regulation or statute has been cited in the instant objection. Applicant further notes that the MPEP (which merely sets forth suggested guidelines as opposed to requirements) is not a proper basis for objections or rejections by the USPTO denying an Applicant's patent application; see instead Title 35 of the United States Code, Title 37 of the Code of Federal Regulations and/or

RESPONSE under 37 C.F.R. § 1.111  
U.S. Appln. No. 10/027,978

relevant legal precedent. It is respectfully submitted that Applicant's Abstract fully complies with all laws and regulations governing patent applications and thus reconsideration of this objection is respectfully requested.

### DRAWINGS

The Office Action objects to the application drawings under 37 C.F.R. § 1.83(a) as not showing every feature specified in the claims. The Office Action cites specific claim language alleging these features are not depicted in the drawings. Applicant respectfully disagrees. For example, in Applicant's figure 1, table walk device is clearly shown as element 170, processor is designated as element 120, memory device as element 190, MMU as element 150, and etcetera.

If it is the Examiner's contention that the signal interactions between various hardware devices be depicted in the drawings, Applicant is at loss as to how one would be expected to "illustratively" demonstrate, for example, "receiving data" or "transmit[ing] an abort signal" between the illustrated hardware elements. Further, the Office Action provides no reasonable suggestion how Applicant should do so. Since all illustratable features of the pending claims are shown in the drawing, it is respectfully submitted that the drawing figures fully comply with the requirements of 37 C.F.R. § 1.83(a). Reconsideration is respectfully requested.

### CLAIM REJECTIONS.

#### 35 U.S.C. § 112 (first paragraph)

Claims 14-28 are rejected under 35 U.S.C. § 112, first paragraph, as failing to disclose the best mode contemplated by the inventor at the time of filing. Applicant respectfully traverses this rejection for the following reasons.

Essentially, the Office action takes the position that the frequent use of the terms "may be" or "may" in describing Applicant's embodiments, relates to concealment of the best mode.

RESPONSE under 37 C.F.R. § 1.111  
U.S. Appln. No. 10/027,978

Applicant respectfully reminds the Examiner that “[t]here is no requirement in the statute that applicants point out which of their embodiments they consider to be their best; that the disclosure includes the best mode contemplated by applicants is enough to satisfy the statute.” *Ernsthausen v. Nakayama*, 1 USPQ2d 1539 (Bd. Pat. App. & Inter. 1985) (emphasis added).

Further, the examiner should assume that the best mode is disclosed in the application, unless evidence is present that is inconsistent with that assumption. See, MPEP 2165.03. In the instant case, the Examiner has not even alleged that the best mode is not disclosed in the application, only that Applicant has not specifically identified which variations are considered to be the best mode in the application. Since the present rejection is improper on its face, Applicant requests reconsideration and withdrawal of this rejection.

In respect to the Examiner’s comments about Applicant’s claiming an MMU in claim 24 allegedly being in contrast to the specification, Applicant notes that the specification page 2 read in context refers to potential adverse consequences for “use” of an MMU for performing address translations. Further, certain embodiments specifically reference an MMU (e.g., 150; Fig. 1) in connection with a separate table walk device and memory controller and thus Applicant is entitled to claim such embodiments.

**35 U.S.C. § 102(b)**

Claims 14-18 and 20 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,666,509 to McCarthy et al. (hereinafter “McCarthy”). Applicant respectfully traverses this rejection for the following reasons.

It is well established that to establish a prima facie case of anticipation under 35 U.S.C. § 102 is established only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Veregall Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987).

RESPONSE under 37 C.F.R. § 1.111  
U.S. Appl. No. 10/027,978

Applicant notes however that McCarthy is of the type of prior art device which Applicant's invention is designed to improve. Notably, all table walk functions performed by the device of McCarthy are performed by memory management unit (MMU 32; Fig. 3) itself. This means that table walks to an external memory in McCarthy must each pass through a multiplexer (e.g., MUX 46; Fig. 3) thereby consuming time and resources. (Col. 4, ll. 10-13).

In contrast, as shown by the example embodiment represented in Applicant's Fig.1, table walks may be performed to an external memory 190 by device 170 without the clock-domain change and arbitration/MUXing logic required by prior art devices such as McCarthy.

The Office Action alleges McCarthy control element 44 is analogous to Applicant's claimed memory controller. Applicant respectfully disagrees. McCarthy element 44 is not a memory controller (at least one that is analogous to that claimed by Applicant). Instead, element 44 is representative of logic used for operating the output of multiplexer 46 (col. 4, ll. 60- col. 5, ll. 11). Notwithstanding, Applicant has amended claim 1 (and claims 2-22 by virtue of their dependency thereon) to clarify that the table walk device is external to a memory management unit (MMU). Accordingly, McCarthy cannot anticipate any of claims 1-22 and in fact teaches away from a table walk device which is external to a MMU. In view thereof, the Examiner is respectfully requested to reconsider and withdraw the 102(b) rejection based on McCarthy.

35 U.S.C. § 102(e)

Claims 23-24 and 26-28 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent 6,681,311 to Gaskins et al. (hereinafter "Gaskins"). Applicant respectfully traverses this rejection for the following reasons.

The Office Action alleges that the limitation of claim 23 which recites "*a discrete memory controller adapted to perform a table walk operation*" is disclosed by Gaskins as element 106 (Fig. 7). Respectfully, once again, the Office Action incorrectly interprets an element as being a memory controller.

RESPONSE under 37 C.F.R. § 1.111  
U.S. Appln. No. 10/027,978

In fact, element 106 is table walk logic for performing table walks (col. 6, ll. 3-10) as opposed to being any controller for managing any memory. For improved understanding of memory controllers, Applicant directs the Examiner to col. 4, ll. 65-66 of Gaskins which indicates where an actual memory controller might be located (e.g., coupled to processor bus 148; Fig. 1). Further, data unit 100, which includes table walk logic 106, is indicated by Gaskins to be included in the microprocessor, as opposed to being *a discrete memory controller*. (Col. 4, ll. 60-61, col. 6, ll. 3; Fig. 1). Because, Gaskins fails to teach or suggest at least the discrete memory controller claimed in Applicant's claims 23-28, Gaskins cannot anticipate or render these claims obvious. Applicant further disputes the Office Action allegation that Gaskins TLB 702 is analogous to a memory management unit (MMU). Gaskins clearly states that the TLBs are buffers that cache page table entries, as opposed to managing memory devices. (Col. 5, ll. 25-26).

For the foregoing reasons, Applicant respectfully requests the Examiner to reconsider and withdraw the §102(e) rejection based on Gaskins.

**35 U.S.C. § 103(a)**

Claims 19, 21-22 and 25 are rejected under 35 U.S.C. § 103(a) as being unpatentable over McCarthy in view of U.S. 4,766,537 to Zolnowsky and/or Gaskins in view of McCarthy. Applicant respectfully traverses these rejections for the reasons below.

In both of these rejections, the Office Action relies on McCarthy and/or Gaskins disclosing the subject matter of independent claims 1 or 23. However, these assumptions are incorrect as discussed above. Further, Zolnowsky fails to make up for the above-noted deficiencies of McCarthy and Gaskins, namely *a table walk device that is external to a memory management unit (MMU)* (claims 19 and 21-22) or *a discrete memory controller adapted to perform a table walk operation* (claim 25). Accordingly, taken alone or in any combination, the cited prior art fails to teach or suggest all of Applicant's claimed elements. Applicant further disputes the alleged motivation for combining references as purely speculative and non-

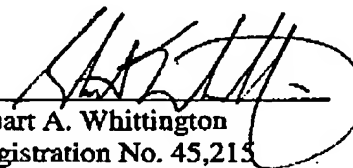
RESPONSE under 37 C.F.R. § 1.111  
U.S. Appln. No. 10/027,978

objective. For the foregoing reasons, Applicant respectfully submits a *prima facie* case of obviousness has not been established and these rejections are requested to be withdrawn.

**CONCLUSION.**

In view of the above, reconsideration and allowance of this application is now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below. Applicant hereby petitions for any extension of time which may be required to maintain the pendency of this case, and any required fee or deficiency thereof, except for the Issue Fee, is to be charged to **Deposit Account # 50-0221.**

Respectfully submitted,

  
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